What is claimed is:

1. A chemical vapor deposited, freestanding β phase polycrystalline silicon carbide having a thermal conductivity of at least 375 W/mK.
2. The silicon carbide of claim 1, wherein the thermal conductivity ranges from about 375 W/mK to about 390 W/mK.
3. The silicon carbide of claim 2, wherein the thermal conductivity is about 389 W/mK.
4. The silicon carbide of claim1, further comprising a crystalline order ratio of less than about 0.10.
5. A chemical vapor deposited, freestanding β phase polycrystalline silicon carbide comprising a crystalline order ratio of less than about 0.10.
6. The silicon carbide of claim 5, wherein the crystalline order ratio is from about 0.05 to about 0.01.
7. A method of preparing a β phase polycrystalline silicon carbide having a high thermal conductivity and low stacking faults comprising:
   a) placing at least one mandrel in a chemical vapor deposition chamber such that the at least one mandrel is orientated in the deposition chamber such that a flow of reactants in the deposition chamber is parallel to a surface of the at least one mandrel;
   b) generating the reactants into the deposition chamber as gases such that the reactants form silicon carbide in the deposition chamber;
   c) maintaining a deposition chamber temperature of greater than 1350° C to about 1450° C; and
   d) depositing the silicon carbide on the surface of the at least one mandrel at a rate of from about 0.1μm/min. to about 3.0μm/min to form a silicon carbide having a thermal conductivity of at least about 375 W/mK.
8. The method of claim 7, wherein the silicon carbide is deposited on the surface of the at least one mandrel at a rate of about 1.5μm/min.
9. The method of claim 7, wherein the reactants comprise hydrogen gas and methyltrichlorosilane.
10. The method of claim 9, wherein a flow rate of hydrogen gas is from about 55 to about 75 slpm, and a flow rate of methyltrichlorosilane is from about 10 to about 15 slpm.

11. The method of claim 9, wherein a hydrogen gas/methyltrichlorosilane gas partial pressure flow ratio is from about 4 to about 10.
12. The method of claim 7, wherein the deposition chamber has a pressure of from about 100 to about 300 torr.
13. The method of claim 7, wherein the at least one mandrel has a temperature of from about 1355° C to about 1370° C.
14. The method of claim 7, wherein the silicon carbide has a thermal conductivity of from about 375 W/mK to about 390 W/mK.
15. The method of claim 7, wherein a crystalline order ratio of the silicon carbide is less than about 0.10.
16. The method of claim 15, wherein the crystalline order ratio is from about 0.05 to about 0.01.
17. The method of claim 7, wherein the silicon carbide is deposited on the mandrel between about 50 cm and 140 cm from a gas reactant source in the deposition chamber.
18. A method of preparing a β phase polycrystalline silicon carbide having a high thermal conductivity and low stacking faults comprising:
    a) placing at least one mandrel in a chemical vapor deposition chamber such that gas reactants flow parallel to a surface of the at least one mandrel;
    b) generating gas reactants composed of hydrogen gas and methyltrichlorosilane gas in the deposition chamber, a flow rate of the hydrogen gas is about 67 slpm and a flow rate of the methyltrichlorosilane gas is about 11 slpm;
    c) maintaining the deposition chamber temperature at about 1355° C, and the deposition chamber pressure at about 200 torr throughout the deposition method; and
    d) depositing silicon carbide on the surface of the at least one mandrel at a deposition rate of about 1.5μm/min., the silicon carbide having a thermal conductivity of at least 375 W/mK and a crystalline order ratio of less than about 0.10.
19. The method of claim 18, wherein a gas partial pressure flow ratio of hydrogen/methyltrichlorosilane is about 6.0.
20. The method of claim 18, wherein the silicon carbide is deposited on the surface of the at least one mandrel between 50 cm to about 140 cm from a gas reactant source in the deposition chamber.

21. The method of claim 18, wherein the silicon carbide has a thermal conductivity of about 375 W/mK to about 390 W/mK.

22. The method of claim 18, wherein the silicon carbide has a crystalline order ratio of from about 0.05 to about 0.010.